Listing of Claims

Claim 1 (Proposed Amendment): A method of reducing number of computations when modeling several systems using a neural network, wherein said neural network contains a plurality of neurons, wherein each system is modeled by starting with a corresponding plurality of initial weights for said plurality of neurons and performing computations iteratively to re-compute weights of at least one of said neurons until a pre-specified condition is obtained, wherein the weights of said neurons when said pre-specified condition is obtained represents final weights modeling the system ~~said plurality of neurons with associated set of final weights causes said neural network to provide output values within a desired error level~~, said method comprising:

receiving a first data set characterizing the behavior of a first system, said first data set containing a first plurality of data elements;

modeling said first system based on said first data set using said neural network, wherein a first set of weights are generated by said modeling said first system, wherein said first set of weights corresponds to the set of final weights associated with said plurality of neurons modeling said first system;

receiving a second data set characterizing the behavior of a second system sought to be modeled by said neural network, said second data set containing a second plurality of data elements;

determining whether said first plurality of data elements follow a similar pattern as said second plurality of data elements; and

modeling said second system based on said second data set using said neural network, wherein said first set of weights are used as weights for said plurality of neurons while modeling said second system if said first plurality of data elements follow a similar pattern as said second plurality of data elements.

Claim 2 (Previously Presented): The method of claim 1, further comprising storing said first set of weights in a non-volatile storage.

Claim 3 (Previously Presented): The method of claim 1, wherein random values are used as said plurality of initial weights for said plurality of neurons while modeling said

second system if said first plurality of data elements do not follow a similar pattern as said second plurality of data elements.

Claim 4 (Original): The method of claim 1, wherein said determining comprises:

fitting said first data set into a first curve, wherein said first curve is represented in the form of a first polynomial function having a first set of coefficients;

fitting said second data set into a second curve, wherein said second curve is represented in the form of a second polynomial function having a second set of coefficients;

computing a distance between said first set of coefficients and said second set of coefficients; and

checking whether said distance is less than a threshold, wherein said first plurality of data elements are determined to follow a similar pattern as said second plurality of data elements if said distance is less than said threshold.

Claim 5 (Original): The method of claim 4, wherein each of said first plurality of data elements and said second plurality of data elements is normalized to a pre-specified range prior to said fitting.

Claim 6 (Original): The method of claim 4, wherein each of said first set of coefficients and said second set of coefficients is normalized to a pre-specified range prior to said computing.

Claim 7 (Previously Presented): The method of claim 4, wherein each of said first data set and said second data set comprises stock share prices of corresponding stocks.

Claim 8 (Currently Amended): A computer readable medium carrying one or more sequences of instructions causing a digital processing system reduce number of computations in a neural network modeling several data sets, wherein said neural network contains a plurality of neurons, wherein each system is characterized by a corresponding data set containing data elements and expected values, and is modeled by starting with a corresponding plurality of initial weights for said plurality of neurons and ~~performing~~

~~computations~~ iteratively computing weights of said neurons until said plurality of neurons with associated set of final weights causes said neural network to provide output values within a desired ~~error level~~ degree of accuracy compared to expected output values, wherein execution of said one or more sequences of instructions by one or more processors contained in said digital processing system causes said one or more processors to perform the actions of:

receiving a first data set and a first set of expected output values characterizing the behavior of a first system, said first data set containing a first plurality of data elements;

modeling said first system based on said first data set using said neural network such that said neural network generates output values with a corresponding desired degree of accuracy compared to said first set of expected output values in response to receiving said first plurality of data elements, wherein a first set of weights are generated by said modeling said first system, wherein said first set of weights corresponds to the set of final weights associated with said plurality of neurons modeling said first system;

receiving a second data set and a second set of expected output values characterizing the behavior of a second system sought to be modeled by said neural network, said second data set containing a second plurality of data elements;

determining whether said first plurality of data elements follow a similar pattern as said second plurality of data elements; and

modeling said second system based on said second data set and said second set of expected values using said neural network, wherein said first set of weights are used as weights for said plurality of neurons while modeling said second system if said first plurality of data elements follow a similar pattern as said second plurality of data elements.

Claim 9 (Previously Presented): The computer readable medium of claim 8, further comprising storing said first set of weights in a non-volatile storage.

Claim 10 (Previously Presented): The computer readable medium of claim 8, wherein random values are used as said plurality of initial weights for said plurality of neurons while modeling said second system if said first plurality of data elements do not follow a similar pattern as said second plurality of data elements.

Claim 11 (Original): The computer readable medium of claim 8, wherein said determining comprises:

fitting said first data set into a first curve, wherein said first curve is represented in the form of a first polynomial function having a first set of coefficients;

fitting said second data set into a second curve, wherein said second curve is represented in the form of a second polynomial function having a second set of coefficients;

computing a distance between said first set of coefficients and said second set of coefficients; and

checking whether said distance is less than a threshold, wherein said first plurality of data elements are determined to follow a similar pattern as said second plurality of data elements if said distance is less than said threshold.

Claim 12 (Previously Presented): The computer readable medium of claim 11, wherein each of said first data set and said second data set comprises stock share prices of corresponding stocks.

Claim 13 (Currently Amended): An apparatus in a digital processing system said apparatus reducing number of computations when modeling several systems using a neural network, wherein said neural network contains a plurality of neurons, wherein each system is characterized by a corresponding data set containing data elements and expected values, and is modeled by starting with a corresponding plurality of initial weights for said plurality of neurons and performing computations iteratively computing weights of said neurons until said plurality of neurons with associated set of final weights causes said neural network to provide output values within a desired error level, said apparatus comprising:

means for receiving a first data set and a first set of expected output values characterizing the behavior of a first system, said first data set containing a first plurality of data elements;

means for modeling said first system based on said first data set using said neural network such that said neural network generates output values with a corresponding desired degree of accuracy compared to said first set of expected output values in response to receiving said first plurality of data elements, wherein a first set of weights are generated by

said modeling said first system, wherein said first set of weights corresponds to the set of final weights associated with said plurality of neurons modeling said first system;

means for receiving a second data set and a second set of expected output values characterizing the behavior of a second system sought to be modeled by said neural network, said second data set containing a second plurality of data elements;

means for determining whether said first plurality of data elements follow a similar pattern as said second plurality of data elements; and

means for modeling said second system based on said second data set and said second set of expected values using said neural network, wherein said first set of weights are used as weights for said plurality of neurons while modeling said second system if said first plurality of data elements follow a similar pattern as said second plurality of data elements.

Claim 14 (Previously Presented): The apparatus of claim 13, further comprising means for storing said first set of weights in a non-volatile storage.

Claim 15 (Previously Presented): The apparatus of claim 13, wherein random values are used as said plurality of initial weights for said plurality of neurons while modeling said second system if said first plurality of data elements do not follow a similar pattern as said second plurality of data elements.

Claim 16 (Original): The apparatus of claim 13, wherein said means for determining is operable to:

fit said first data set into a first curve, wherein said first curve is represented in the form of a first polynomial function having a first set of coefficients;

fit said second data set into a second curve, wherein said second curve is represented in the form of a second polynomial function having a second set of coefficients;

compute a distance between said first set of coefficients and said second set of coefficients; and

check whether said distance is less than a threshold, wherein said first plurality of data elements are determined to follow a similar pattern as said second plurality of data elements if said distance is less than said threshold.

Claim 17 (Previously Presented): A method of reducing number of computations when modeling several systems using a neural network, said method comprising:

receiving a first data set and a first set of expected values characterizing the behavior of a first system, said first data set containing a first plurality of data elements;

modeling said first system based on said first data set using said neural network such that said neural network generates output values with a corresponding desired degree of accuracy compared to said first set of expected output values in response to receiving said first plurality of data elements, wherein a first set of weights are generated by said modeling said first system;

receiving a second data set and a second set of expected output values characterizing the behavior of a second system, said second data set containing a second plurality of data elements;

determining whether said first plurality of data elements follow a similar pattern as said second plurality of data elements; and

modeling said second system based on said second data set and said second set of expected values using said neural network, wherein said first set of weights are used as initial weights while modeling said second system if said first plurality of data elements follow a similar pattern as said second plurality of data elements,

wherein random values are used as initial weights while modeling said second system if said first plurality of data elements do not follow a similar pattern as said second plurality of data elements.

Claim 18 (Previously Presented): The method of claim 1, wherein said first set of weights are used as initial weights for said plurality of neurons in said neural network while modeling said second system.

Claim 19 (Previously Presented): The computer readable medium of claim 8, wherein said first set of weights are used as initial weights for said plurality of neurons in said neural network while modeling said second system.

Claim 20 (Previously Presented): The apparatus of claim 13, wherein said first set of weights are used as initial weights for said plurality of neurons in said neural network while modeling said second system.

Claim 21 (New): The method of claim 1, wherein said pre-specified condition is obtained when said plurality of neurons with associated set of final weights causes said neural network to provide output values within a desired error level.